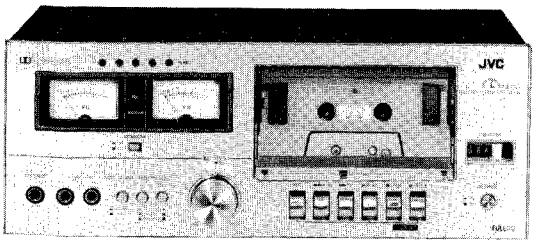
JVC

SERVICE MANUAL

MODEL

KD-21A/B/E/U
KD-15A/B/C/E/J/U

STEREO CASSETTE DECK



KD-15

KD-21

No. 4150
December 1976

This manual contains all you need to know about the new KD-15/KD-21 cassette decks. Operation and facilities provided the two models are the same except for the meter grille employed on the KD-15.

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Specifications

Type	:	Stereo cassette deck
Track system	:	4-track, 2-channel
Cassettes	:	C-30, C-60, C-90
Frequency response		
Chrome *1	:	20 – 16,000Hz (Nominal) 30 – 15,000Hz (Typical)
Regular *2	:	20 – 15,000Hz (Nominal) 30 – 14,000Hz (Typical)
		Surpasses DIN 45500
Signal-to-Noise ratio	:	52dB (JIS) The S/N is improved by 5dB at 1kHz and by 10dB above 5kHz with Dolby N.R. 62dB with Dolby N.R. (DIN 45500 weighted)
Wow and flutter	:	0.1% (WRMS) 0.20% (DIN 45511)
Crosstalk	:	65dB
Harmonic distortion	:	1.3% (normal tape)
Bias	:	AC bias (95kHz)
Erasure	:	AC erasure
Heads	:	2 heads Hard permalloy head for recording/playback and ferrite head for erasure
Motor	:	Electronically governed DC motor
Tape speed	:	4.8cm/sec.
Recording time	:	2 x 30 minutes with C-60 cassette
Fast forward time	:	100 sec., with C-60 cassette
Rewind time	:	100 sec., with C-60 cassette
Semiconductors	:	5 ICs, 20 transistors, and 29 diodes
Input jacks	:	Mic jack x 2 Max. sensitivity 0.2mV Matching impedance 600Ω – 10kΩ Input jack x 2 Min. input level 80mV Input impedance 100kΩ
Output jacks	:	Output jack x 2 Output level;0.42V Output impedance; 3.5kΩ Matching load impedance 50kΩ or more Headphone jack x 1 Output level 0.3mW Matching impedance 8Ω – 1kΩ
DIN connector	:	Min. input level 30mV/kΩ Input impedance 8kΩ Output level; 0.42V Output impedance; 3.5kΩ Matching impedance 50kΩ or more
Power requirement	:	AC 120V, 60Hz (KD-15C/J) AC120V, 220V, 240V, 50/60Hz (KD-21A/B/E, KD-15A/B/E) AC100V, 120V,200V,220V, 50/60Hz (KD-21U, KD-15U)
Power consumption	:	15W
Dimensions	:	Width; 15- 3/8" (390mm) Height; 6- 1/4" (157mm) Depth; 10-1/4" (259mm)
Weight	:	9.9 lbs. (4.5kg)

*1. . . . .BASF TP-18 or Equivalent
*2. . . . .BASF QP-12 or Equivalent

Design and specifications are subject to change without notice.

Features

Dolby Noise Reduction System used IC.
Vertical cassette holding type with see-through cassette door
Multi-point peak level indicators
Timer recording
Full auto stop
Dual ball cassette holder
Tape selectors
Big size level meter
Excellent design matching JVC's component system

Controls and Connections

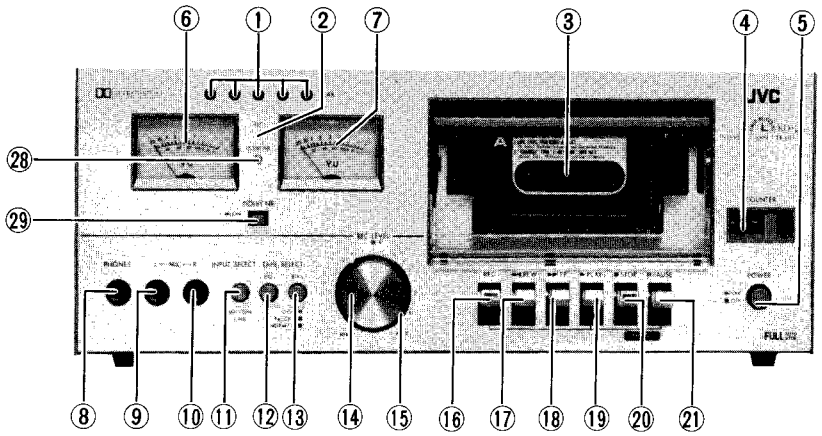


Fig. 1

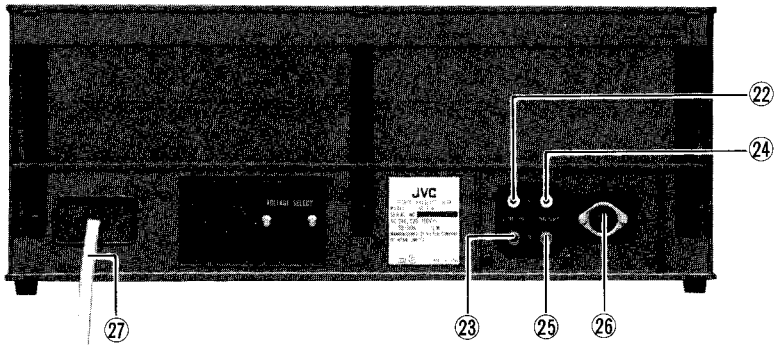


Fig. 2

1. PEAK level indicators
2. REC indicator [REC]
3. Cassette door
4. Tape counter [COUNTER]
5. Power switch [POWER]
6. Left channel level meter [LEFT]
7. Right channel level meter [RIGHT]
8. Headphone jack [PHONE]
9. Left channel microphone jack [MIC-L]
10. Right channel microphone jack [MIC-R]
11. Input select switch [INPUT SELECT]
12. Equalizer switch [EQ]
13. Bias switch [BIAS]
14. Left channel recording level knob [REC LEVEL-L]
15. Right channel recording level knob [REC LEVEL-R]
16. Record button [REC]
17. Rewind button [REW ◀◀]
18. Fast forward button [FF ▶▶]
19. Playback button [PLAY ▶]
20. STOP button [STOP ■]
21. Pause button [PAUSE ▮▮]
22. Left channel LINE IN terminal
23. Left channel LINE OUT terminal
24. Right channel LINE IN terminal
25. Right channel LINE OUT terminal
26. DIN socket [REC/PB]
27. Voltage selector.
28. Dolby N.R. Indicator
29. Dolby N.R. Switch

Main Parts Location

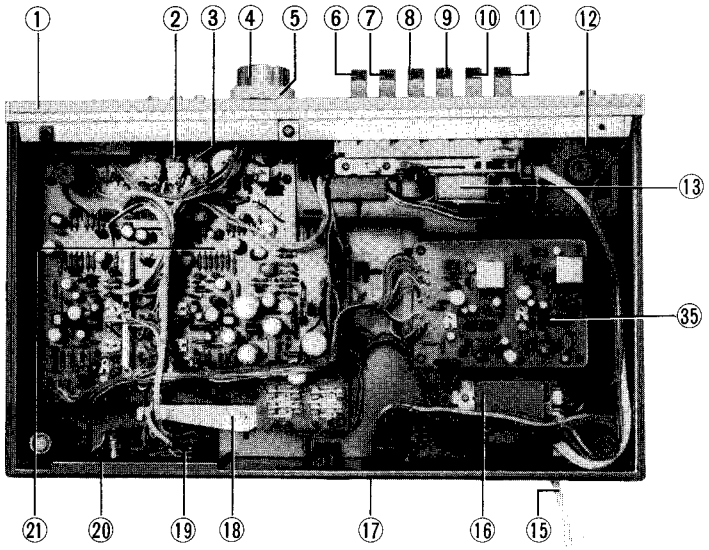


Fig. 3

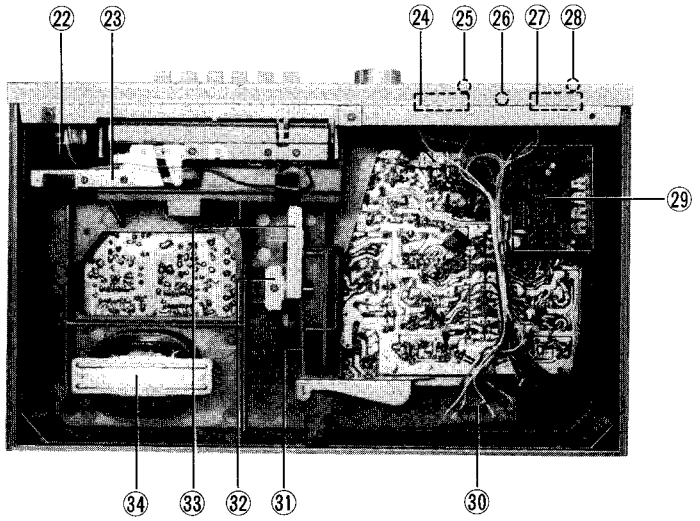


Fig. 4

1. Front panel ass'y
2. Push switch (for equalizer)
3. " (for bias)
4. Left channel recording level knob
5. Right channel recording level knob
6. Push switch (for record)
7. " (for rewind)
8. " (for fast forward)
9. " (for playback)
10. " (for stop)
11. " (for pause)
12. " (for power supply)
13. Solenoid ass'y
14. Connector
15. Power cord
16. Power transformer
17. Cabinet
18. Recording level
19. Jack C. board
20. Jack ass'y (PIN and DIN)
21. Main amplifier C. board
22. Motor ass'y
23. Earth lug
24. Level meter (Right channel)
25. Pilot lamp (for right channel level meter)
26. " (for record indicator)
27. Level meter (Left channel)
28. Pilot lamp (for left channel level meter)
29. Peak level C. board
30. Pilot lamps C. board
31. Connecting rod
32. Bracket
33. Lever
34. Power transformer bracket
35. Dolby N.R. Circuit Board

Main Parts Removing

This cassette deck which features a compact design and high performance uses minuture-sized parts which are closely arranged. Use special care when servicing it.

Enclosure assembly

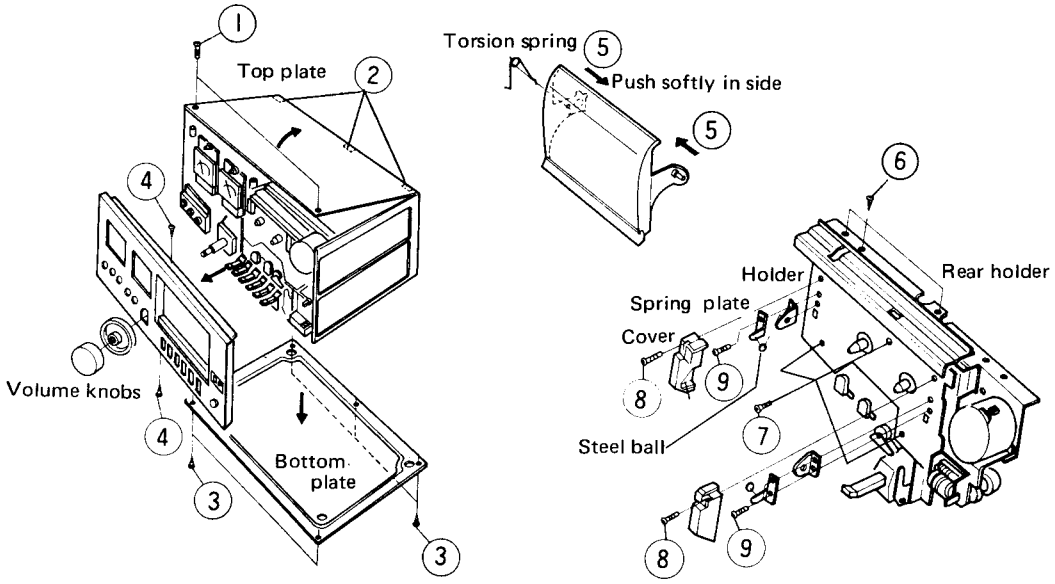


Fig. 5

Parts Name	Procedure	Ref. No.	Remarks
1 Top plate	1. Remove 2 screws forward of the top plate. 2. Lift up on front of the top plate, and remove holding 3 points on rear of top panel.	① ②	1. After removing the top plate only, can be adjusted semi-fixed resistors for peak level indicators. 2. Almost all pattern side of main amplifire circuit board can be checked when only the peak level c.board is removed.
2 Bottom plate	Remove 5 screws fastening the bottom cover.	③	After removing the bottom cover only, can be adjusted semi-fixed resistors on main amp c.board (meter gain adj, playback gain adj.)
3 Front panel ass'y	1. Pull off the knobs for volume. 2. Remove 2 screws fastening the front panel 3. Pull off the front panel. 4. Remove the earth lug on the front plate. (near the hole for VR shaft)	④	Inner knob – for left channel Outer ring – for right channel
4 Cassette lid	Push softly both side of the cassette lid, and remove it from the front panel ass'y.	⑤	When remove the cassette lid, can be removed the tosion spring at as same.
5 Rear holder	Remove 3 screws fastening the rear holder.	⑥	
6 Holder plate	Remove 3 screws fastening the holder plate.	⑦	
7 Cover	Remove 1 screw fastening the cover	⑧	When remove the holder, can be removed the spring plate at as same.
Holder	Remove 2 screws fastening the holder	⑨	

Electrical Parts

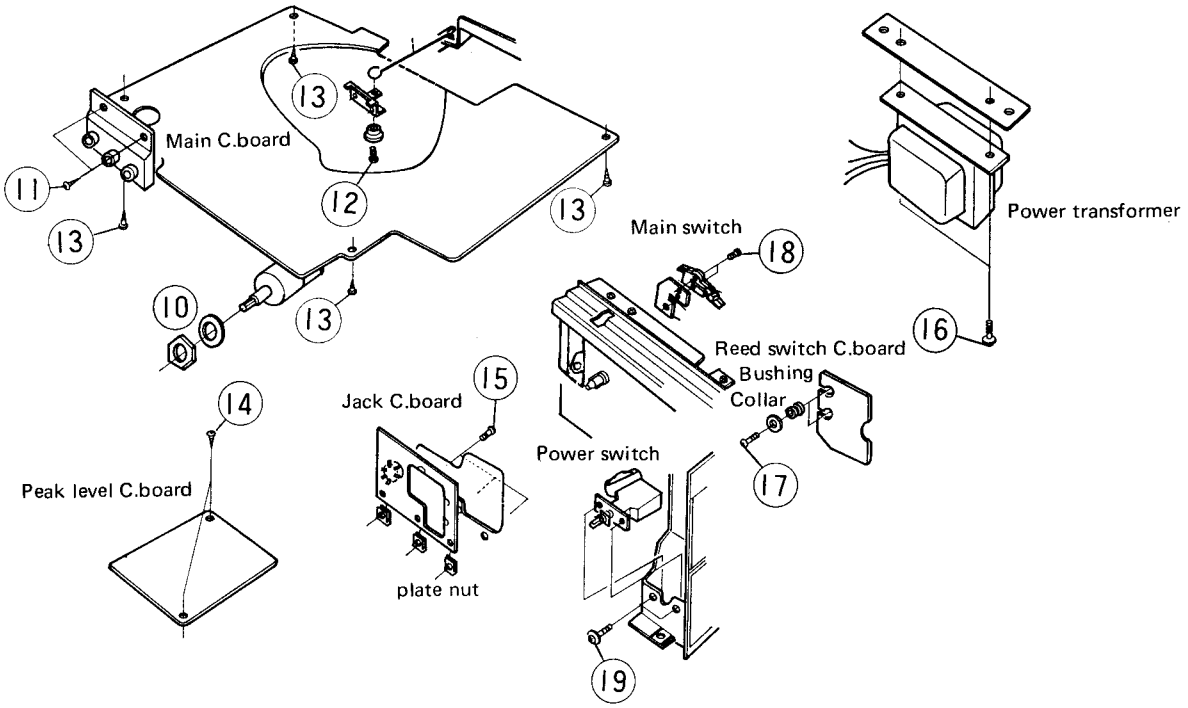


Fig. 6

Remove electrical parts after removing enclosure parts.

Parts Name	Procedure	Ref. No.	Remarks
1 Main Amp circuit board ass'y	1. Remove nut and washer of VR shaft (for volume) fastening the cabinet. 2. Remove 2 screws fastening the MIC and PHONES jacks. 3. Remove metal and screw fastening the connecting rod. 4. Remove 4 screws fastening the main circuit board.	⑩ ⑪ ⑫ ⑬	
2 Peak level circuit board	Remove 2 screws fastening the peak level c.board.	⑭	
3 Jack ass'y (Pin and DIN jacks)	1. Remove 3 screws fastening the jacks c.board. 2. Pull off the jack ass'y.	⑮	When remove the jack ass'y, can be removed the jack c.board and 3 plate nuts on it.
4 Power transformer	Remove 2 screws fastening the power transformer	⑯	
5 Reed switch circuit board	After removing the holder plate, remove 2 screws fastening the Reed SW, c.board. (front and right side on mechanical ass'y)	⑰	When remove the Reed SW. c.board, can be removed 2 bushings and collars.
6 Main switch	Remove 2 screws fastening the main SW to the SW bracket. (left upper side on the mechanical ass'y)	⑱	Remove the main SW after removing the mechanical ass'y from the cabinet.
7 Power switch	1. Remove 2 screws fastening the power switch. 2. Pull off upper side the power switch.	⑲	Remove the power switch after removing the mechanical ass'y from the cabinet.

Mechanical parts

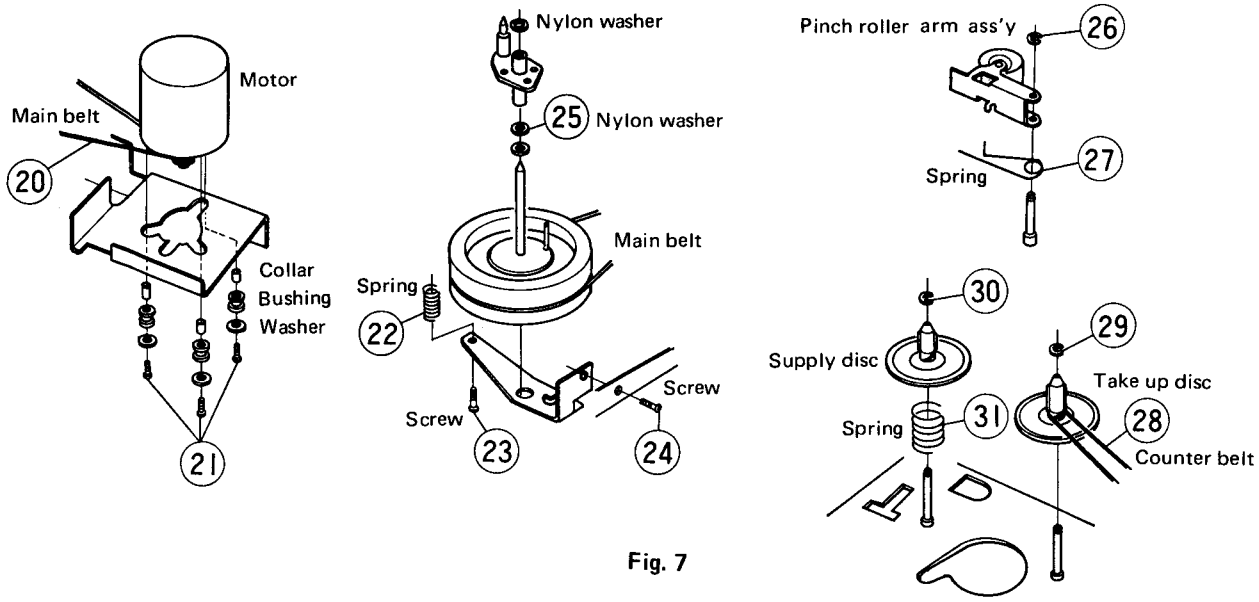


Fig. 7

Remove mechanical parts after removing the enclosure parts.

Parts Name	Procedure	Ref. No.	Remarks
1 Mecha ass'y	1. Remove 4 screws fastening the mecha-ass'y. 2. Pull off in front the mecha-ass'y.		
2 Motor ass'y	1. Remove the main belt. 2. Disconnect 2 wires of the motor ass'y. 3. Remove 3 screws, 3 washers fastening the motor ass'y.	(20) (21)	Be careful not to stain the belt. Colored wires are red and black.
3 Flywheel ass'y	1. Remove the main belt. 2. Remove the spring (flywheel bracket auto stop bar.) 3. Remove 2 screws fastening the flywheel bracket. 4. Pull off the flywheel. (2 nylon washers can be removed on the flywheel shaft at as same.)	(22) (23) (24) (25)	1. When remove the screw, can be removed the spring at as same. 2. When replace the flywheel, don't forget to insert a nylon washer to it's shaft.
4 Pinch roller arm ass'y	1. Remove "E" ring holding the pinch roller arm ass'y. 2. Remove the spring on the it's arm, and pull off it.	(26) (27)	
5 Take up disc	1. Remove the counter belt. 2. Remove "E" ring holding the take up disc. 3. Pull off the disc from the shaft.	(28) (29)	
6 Supply disc	1. Remove "E" ring holding the supply disc. 2. Pull off the disc from the shaft. (The spring can be removed at as same.)	(30)	

Note; 1. Don't dirty, slippery and undue run-out the main belt and counter belt.
2. When replace the screw 23 , hold the flywheel position about 0.1~0.5mm clearance.

Main Adjustments

[I] Equipment and measuring instruments used for adjustment.

1. Electrical adjustment
   1) V.T.V.M. (measuring AC in millivolt)
   2) Audio frequency oscillator
      (range;50~20kHz and output 0dB with impedance 600Ω)
   3) Attenuator
   4) Reference tapes for REC/PB
      TS-1 (QP-12, C521V) – normal tape
      TS-2 (TP-18, C401R) – chrome tape
   5) Reference tapes for playback (JVC Test Tape)
      VTT-658 (for head azimuth adj.)
      VTT-656 (for motor speed, wow flutter adj.)
      VTT-664 (for Reference level 1kHz)
      VTT-675N (for playback frequency responce)
   6) Resistors
      100Ω (for measurement of the bias current)
      600Ω (for attenuator matching)
2. Mechanical adjustment
   1) Gaze for checking the head position
   2) Torque gaze
   3) Blank tape (C-120) for tape runing checker

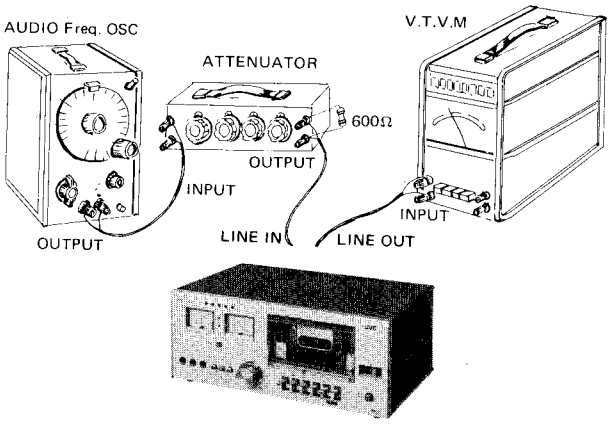
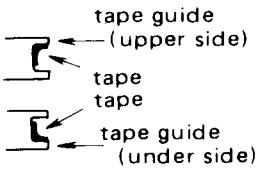
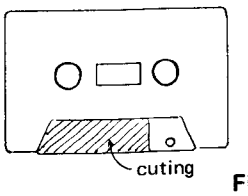
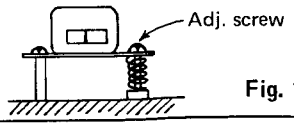
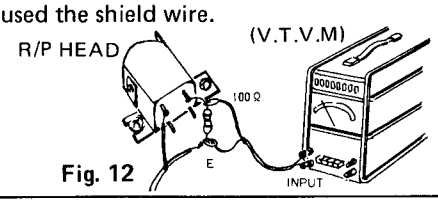


Fig. 8

[II] Procedure for adjustments

When you adjust following items, we recommend to you to keep doing step No.

No. Item	Procedure	Part	Rating	Remarks
1 Take up torque	Measure by the torque measure cassette or the torque gaze tool, at the playback.		40~70 gr-cm	(If not) 1. Clean the main belt, rubber rim of idler, and rubber rim of the right reed disc. 2. Replace the idler arm of take-up and spring.
Fast forward torque Rewinding torque	Measure as same way at FF mode or at REW mode.		70 gr-cm or more	(If not) 1. Clean the main belt, rubber rim of the idler, motor pully, rim of the flywheel, and rubber rim of the reel disc for REW. 2. Replace the reel disc.
2 Head position check	Check the head position by the gaze. The clearance is 0.7mm or less between the head and the gaze.		0.7mm or less	1. Check with your own eyes. 2. If not, high frequency range or, erase ratio will be down.
3 Tape running check	1. Playback the reference tape C-120 (front cutted cassette) and turn the adjustment screw (spring side) so that the tape may run in the center of the guide. 2. If incorrect adjustment does not, make the tape run correctly as the following illustration  Fig. 9	Adjustment screw	No touch the tape guide	1. Checker tape (C-120).  Fig. 10 2. Adjustment screw  Fig. 11

No. Item	Procedure	Part	Rating	Remarks
4 Meter gain adj.	1. Set the deck to the record mode and input the 1kHz (–10dB) signal to LINE IN jacks. 2. Adjust the recording level control so that the LINE OUT becomes –5.5dBs 3. Adjust VR103 and VR203 so that the VU meters indicate zero VU.	(Main amp c.biard TAA338101-01) VR103,203	 0VU	1. When LINE OUT level are 0.42V(–5.5dBs), VU meter indicate 0VU. 2. Adjust right and left channel.
5 Playback sensitivity	1. Set equalizer switch at normal. 2. Playback reference tape VTT-664, and adjust semi-fixed resistors VR101 (L ch) and VR201 (R ch) so that the VU meters indicate zero VU. (–5.5dBs at LINE OUT)	Main amp c.board VR101,201	–5.5dBs.	1. Adjust playback sensitivity when heads are replaced. 2. Do this adjustment after making sure level meter deflection angle is correct.
6 REC/PB head (Azimuth inclination)	1. Playback the azimuth adjustment reference tape VTT-658, 10kHz, turn the azimuth screw so that the output will become maximum. 2. After this adjustment, the screw should be locked with a bond.		max.	If L and R channel output level difference is 3~4dB, replace the head.
7 Motor speed	Playback reference tape VTT-656, 3kHz, and adjust the semi-fixed resistor in motor case so that the speed is 3000Hz ±2%.	Adjustment hole on motor case	3000Hz ±2% (2940~ 3060Hz)	
8 Wow flutter	Playback reference tape VTT-656, 3kHz, and check the wow flutter less than 0.3%.		less than 0.3%	at RMS
9 P.B. frequency responce measuring	1. Playback reference tape VTT-675N(1kHz). check the frequency responce to be as follows. reference frequency 1kHz chrome 63Hz –1dB±5dB chrome 10kHz –3dB±3dB normal 63Hz –1dB±5dB normal 10kHz 0dB±3dB			
10 Record/ Playback frequency responce measuring	1. Set the deck to the record mode. 2. Oftain the zero VU meter level at recording (1kHz) attenuate signal by 20dB record and playback at 1kHz, 50Hz and 10kHz. Adjust VR1 or VR106,206 semi-fixed resistors so that out put level difference become as remarks.			reference frequency1kHz chrome 50Hz –2±4dB chrome 10kHz 0±5dB normal 50Hz –2±4dB normal 10kHz 0±5dB
11 Bias current	1. Set the deck to the pause mode. 2. With no signal, connect a 100Ω resistor in the ground side of the head and connect the V.T.V.M. across the resistor and set the BIAS SW at chrome or normal. First adjust for chrome tape, then for normal tape. 3. When adjust the bias current, should be used the shield wire.  Fig. 12	Main amp c.board chrome VR106,206 normal VR1	 chrome 45mV normal 75mV	1. Adjust bias current when heads or other parts are placed. 2. Use the highclass V.T.V.M. for high frequency responce. 3. After the bias current adjustment, check the frequency responce at 10kHz signal input. 4. The earth wire of the head is the one which VU meter moves, when you touch the head tip by your finger at the playback mode.

No. Item	Procedure	Part	Rating	Remarks
12 Recording signal current	1. Set the deck in the recording mode. 2. Input 1kHz, −10dB signal and adjust the recording level so that LINE OUT becomes −5.5dBs (0.42V), and then VU meter become 0VU. 3. Recording at 0VU and adjust the recording signal current so that output level becomes 0VU at playback. 4. Repeat step (3) until the recording and it's playback level is same.	VR104,204		1. Adjust it when heads or other parts are replaced. 2. Set EQ and BIAS switches according to the type of the tape used. 3. Do not adjust at chrome tape. 4. After meter gain adjustment, adjust recording signal current. 5. When it adjust using 100Ω resistor across the head tips, adjust VR104 and VR204 so that OUTPUT level becomes 3.8mV. (at 0VU L and R channel) at recording and playback.
13 Peak level	Set as same mode of No 12 (recording signal current) and adjust semi-fixed resistor VR503 so that the "0" indicator is lighting and not lighting at −1~−2dB signal down with attenuator. 1. Adjust semi-fixed resistor VR504 so that the "−5" indicate is lighting at −5dB with attenuator. 2. Adjust VR505 so that the "−10" indicator is lighting at −10dB with attenuator. 3. Adjust VR502 so that the "+3" indicator is lighting at +3dB with attenuator. 4. Adjust VR501 so that the "+6" indicator is lighting at +6dB with attenuator.	Peak level c.board [TAA338433] VR504 VR505 VR502 VR501		Set the deck in the record mode. Input 1kHz, 10dB, and adjust the recording level control so that LINE OUT level becomes −5.5dBs Then check the VU meter to indicate 0VU, and adjust the peak level at it's mode.
14 Dolby N.R circuit	1. Input −17dBs 1kHz signal from LINE IN, adjust the semi-fixed resistor (VR301, 401) so that the test point W3 and W5 is 580mV (−2.5dBs) (Do not make bias oscillator work.) 2. Check the test point W1 and W9 output to be −25dBs±2dB attenuated 30dB (−47dBs) at 1.4kHz signal and output to be −24.3dBs ±2dB attenuated 30dB (−47dBs) at 5kHz signal.			

Trouble Shooting Guide

[ELECTRICAL CIRCUIT]

1. Playback tone quality is poor.

1. Check the record/playback head for dust.
2. Check the record/playback head for wear.
   If worn excessively, the loss of treble response will result.
3. Check wiring for a short-circuit.
   Check each transistor for condition.

2. Recording tone quality is poor.

The playback tone quality of a recorded tape such as the audition tape is good, but the recording by this unit produces poor tone quality. In this case, the unit should be checked in the following manner.

1. By monitoring a music while recording, check the tone quality.
2. If found poor, check the wiring of the recording system for a broken wire and short-circuit.
3. If no irregularity is found, check the recording bias current. Also check the oscillation circuit.

3. For other failures, check the unit in the same manner as other amplifiers.

[MECHANISM SECTION] (wow and flutter)

If wow and flutter increase, check the following points.
If there is defect in revolving parts, the wow and flutter generated will increase in proportion to the number of revolutions.
Play a 3000Hz test tape, and defective part can be detected from the sound.

Section	Trouble	Repair
Capstan and flywheel	Capstan shaft has excessive run-out. Flywheel turns heavily. (shaft seisure, thrust play, etc.)	Replace flywheel. Clean the capstan shaft and the groove in the flywheel. Apply oil to the metal position. Replace the capstan assembly.
Pinch roller	Rough rotation (Deformation scratches, or dust). The angular position of the pinch roller is not correct. The pinch roller pressure is not correct.	Replace pinch roller, or pinch roller spring. Clean the pinch roller or apply oil to the rotary shaft. Adjust the pinch roller so that it is parallel with the capstan shaft. Replace the pinch roller spring.
Belt	Belt has undue run-out. Belt is dirty or slippery.	Clean the belt or remove the distortion. Replace the belt.
Back tension	Back tension is irregular, or back tension is too strong.	Replace back tension spring (under supply disc).
Motor	Motor shaft has undue run-out. Motor pulley is oily and dusty.	Replace motor. Clean motor pulley.
Take-up idler arm	Pulley has deflection. Pulley is stuck.	Replace take-up idler arm.

Maintenance

Maintenance is important in obtaining trouble-free service life.
Do not forget cleaning and demagnetizing

Head cleaning

The heads which come in contact with the tape easily attract dust and magnetic particles. Be sure to clean them after approx. 10 hours operation.

1. If the heads are dirty . . . . . .
   High frequencies are not obtained.
   Sound becomes smaller.
   Recording is not possible.
   } = Clean the recording and erase heads.
   Previous recording is not erased.=Clean the erase head.
2. Cleaning procedure
   1) Open the cassette door. Depress the PLAY lever to move the head out. (The power switch should be in the OFF position.)
   2) Use the head cleaning stick provided to wipe the surface contacting the tape. (More effective cleaning is obtained by moistening the cotton in alcohol.)

Cleaning pinch roller and capstan

The pinch roller and capstan are vitally important in obtaining stable tape movement. Dirt and magnetic particles accumulating on these parts will cause unstable tape transport.
Clean them the same as the heads.
Cleaning procedure

1) Depress the PLAY lever, with the power switch set to on, to permit movement of the pinch roller out and allowing it to rotate.
2) Wipe the capstan and the pinch roller, which is rotating, with a soft cloth (if moistened with alcohol, cleaning will be more effective). Be careful of the position when wiping off as they easily roll in the cloth.

○ Do not use silicone or oil. Do not use hexane, carbon tetrachloride or violent solution.

Cleaning the panel and external surfaces

○ Wipe the panel and external surfaces with a cloth dipped in a neutral cleaning solution or with a polishing cloth.

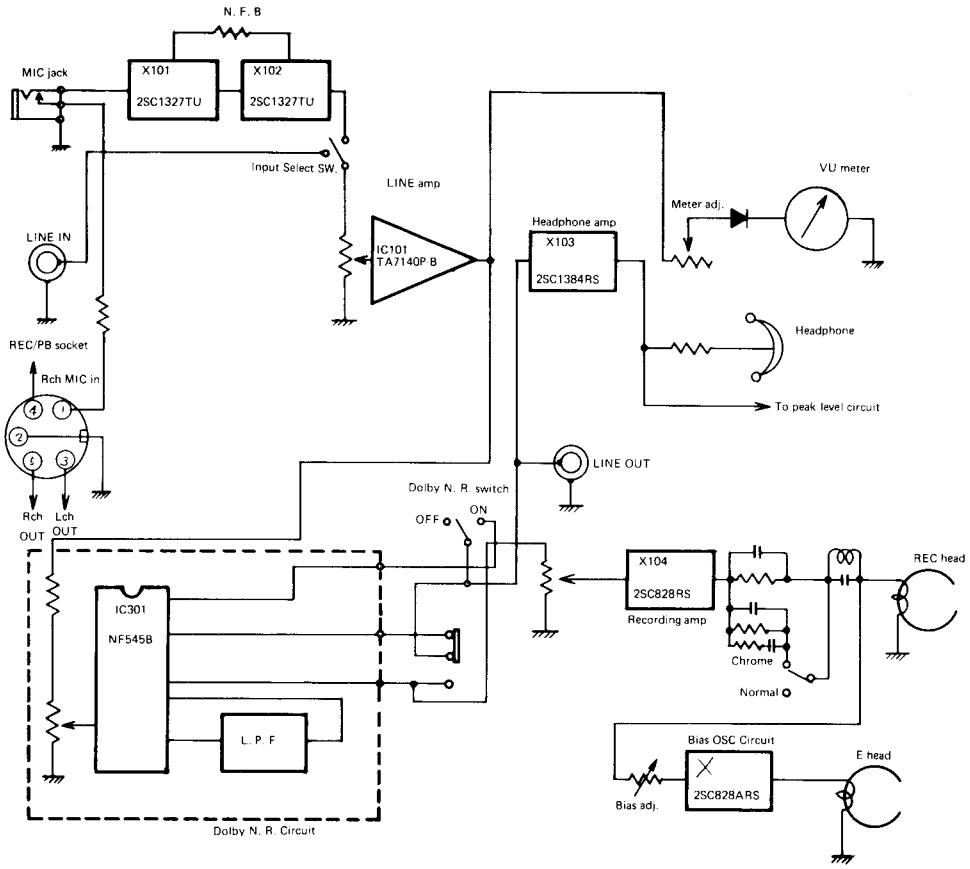
Demagnetizing

The heads are made from a material resistant to magnetization, however, after long use they may become magnetized. If noise seems to have increased, demagnetize the heads with a head magnetizer available on the market.

○ When damagnetizing the head (there is no need to demagnetize the erase head), be sure to turn the power switch off.
○ A magnetic object (ex. magnetized screwdriver brought into the vicinity can magnetize the heads and cause excess noise. Be careful.

Block Diagram

RECORDING SYSTEM



PLAYBACK SYSTEM

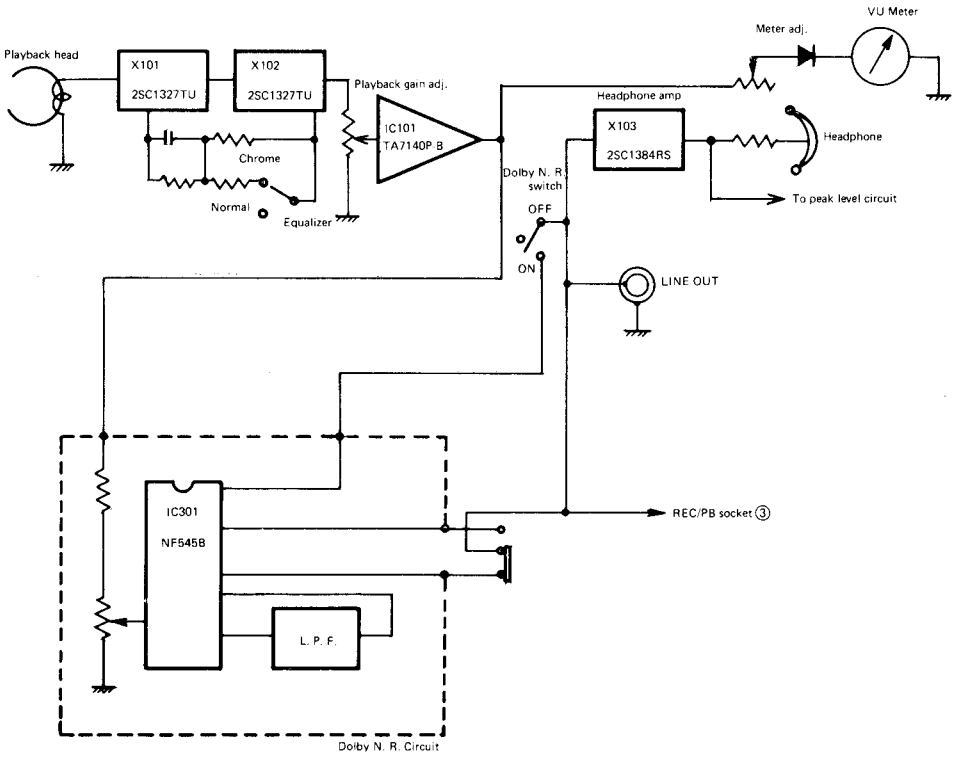


Fig. 13

VARIABLE RESISTORS

VR101,201	QVP8A0B-054	Playback gain adj.	50kΩ
VR102,202	QVL6A3A-054	Recording level control(on the front panel)	50kΩ
VR103,203	QVP8A0B-013	Meter gain adj.	1kΩ
VR104,204	QVP8A0B-054	Recording gain adj.	50kΩ
VR1	QVZ3111-002	Bias current adj. (normal)	1kΩ
VR106,206	QVP8A0B-054	Bias current adj. (chrome)	50kΩ
VR501,502,503,504,505	QVP8A0B-055	Peak level adj.	500kΩ
VR301,401	QVP8A0B-023	Dolby N. R. adj.	2kΩ

TRANSISTORS

X101,201,102,202	2SC1327TU	
X103,203	2SC1384RS	
X104,204	2SC828RS	..... Main amp. circuit
X5	2SC828ARS	
X1,2	2SC1847QS	
X3,4	2SC828RS	
X501,502,503,504,505	2SC828ST	..... Peak level circuit

ICs

IC101,201	TA7140PB	Line amp. circuit
IC501	TD3404AP	Peak level circuit
IC301,401	NE545B	Dolby N. R. circuit

DIODES

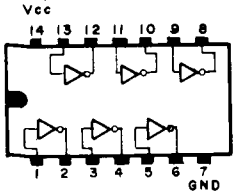
D101,201	OA90	Ge. diode	Meter circuit
D6	RD24E(1)	Zener diode	..... Power supply circuit
D7,8,9,10	OA90	Ge. diode	
D1,2,3,4,5,12	T30155 or V06B	Si. diode	
D11	RD10E(1)	Zemer diode	
D502~505	OA90	Ge. diode	..... Peak level circuit
D501	IN4733T5	Zemer diode	
D401~405	TLR102	LED(Light emitted diode)...	Peak level indicator
D301,401	OA91	Ge. diode	

SWITCHS

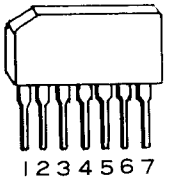
S101-1~9, 201-1~9	QSS9201-001	REC/PB switch at "PB" mode
S102-1~3, 202-1~3	QSP0219-006	Equalizer switch at normal
S103-1~2, 203-1~2	QSP0219-005	Bias switch at normal
S1	QSP1110-221	Power switch at "OFF"
S2-1	6251804T	Motor and muting switch at motor "OFF" and muting "ON"
S2-2	6251804T	Muting switch at "ON"
S3	6251804T	Pause switch at "OFF"
	TDS271409-01	Reed switch
S104-1~2, 204-1~2	QSP0219-007	Dolby N.R. switch

Transistor

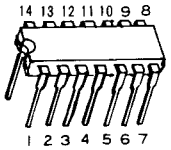
IC TD3404AP
(TOP VIEW)



IC TA140P-BC



IC TD3404AP



IC TA7140PB

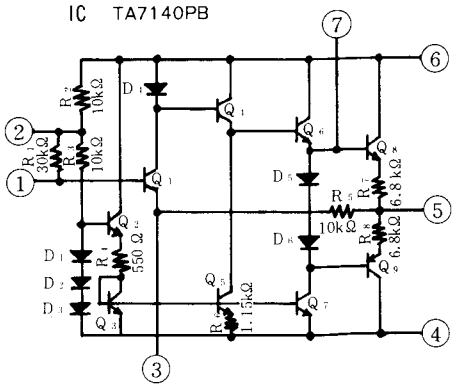
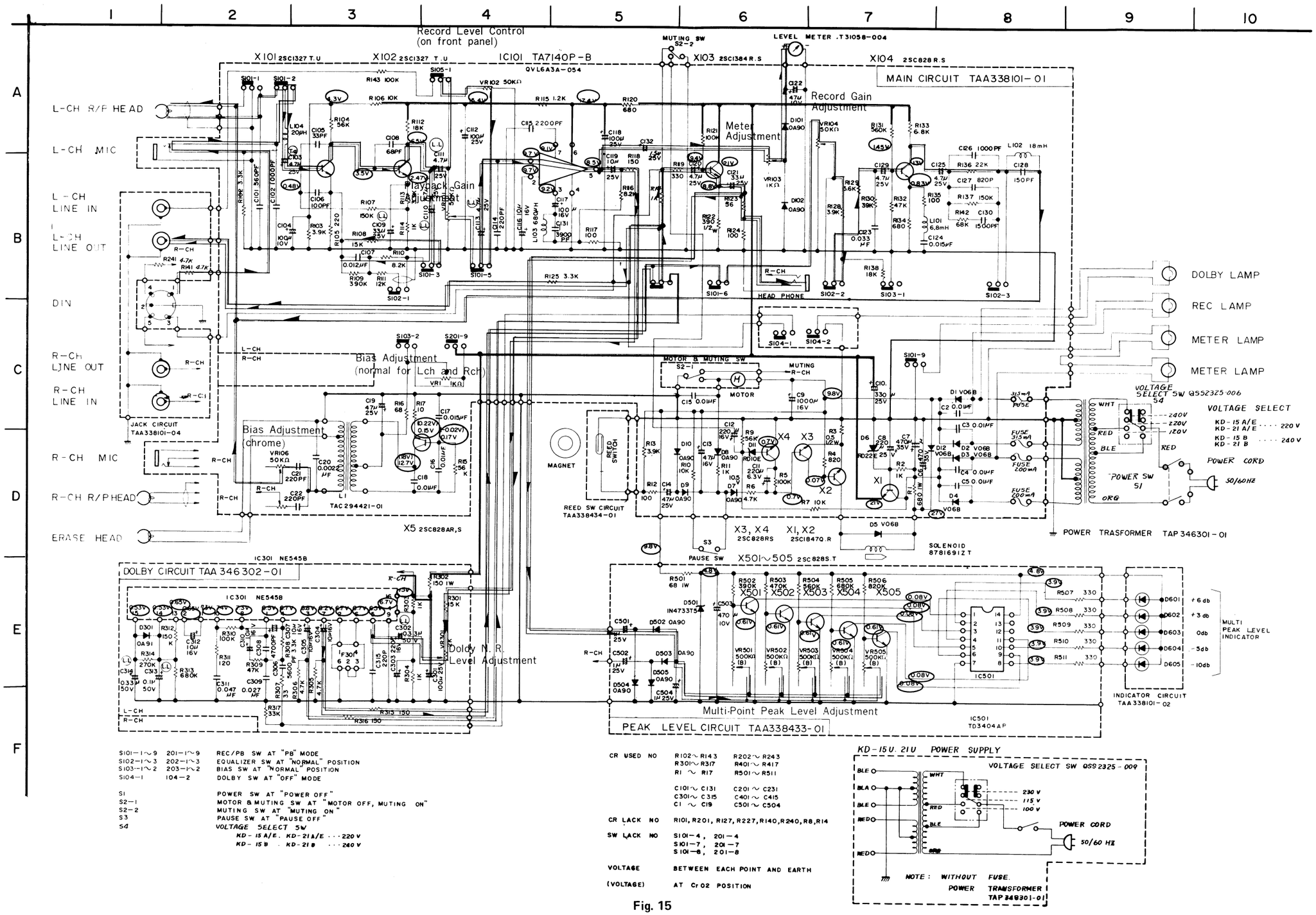


Fig. 14

Standard Schematic Diagram

1. Black print are shown the voltage (V) at playback mode by V.T.V.M. and red print are shown it by tester.
2. Only black print voltage are shown it by tester as same as by V.T.V.M.
3. ( ) voltage; at recording mode.
4. Red line . . . . . +B circuit (wide)

Red line . . . . . Signal via at playback mode (narrow)
Blue line . . . . . Signal via at record mode
Blue letter. . . . . Adjustments



SI01-1~9	201-1~9	REC/PB SW AT "PB" MODE
SI02-1~3	202-1~3	EQUALIZER SW AT "NORMAL" POSITION
SI03-1~2	203-1~2	BIAS SW AT "NORMAL" POSITION
SI04-1	104-2	DOLBY SW AT "OFF" MODE
SI		POWER SW AT "POWER OFF"
S2-1		MOTOR & MUTING SW AT "MOTOR OFF, MUTING ON"
S2-2		MUTING SW AT "MUTING ON"
S3		PAUSE SW AT "PAUSE OFF"
S4		VOLTAGE SELECT SW
		KD-15 A/E. KD-21A/E ···220 V
		KD-15 B . KD-21 B ···240 V

CR USED NO	R102~R143	R202~R243
	R301~R317	R401~R417
	R1 ~ R17	R501~R511
	C101~C131	C201~C231
	C301~C315	C401~C415
	C1 ~ C19	C501~C504
CR LACK NO	R101, R201, R127, R227, R140, R240, R8, R14	
SW LACK NO	SI01-4, 201-4	
	SI01-7, 201-7	
	SI01-8, 201-8	
VOLTAGE	BETWEEN EACH POINT AND EARTH	
(VOLTAGE)	AT Cr02 POSITION	

Fig. 15

Wiring

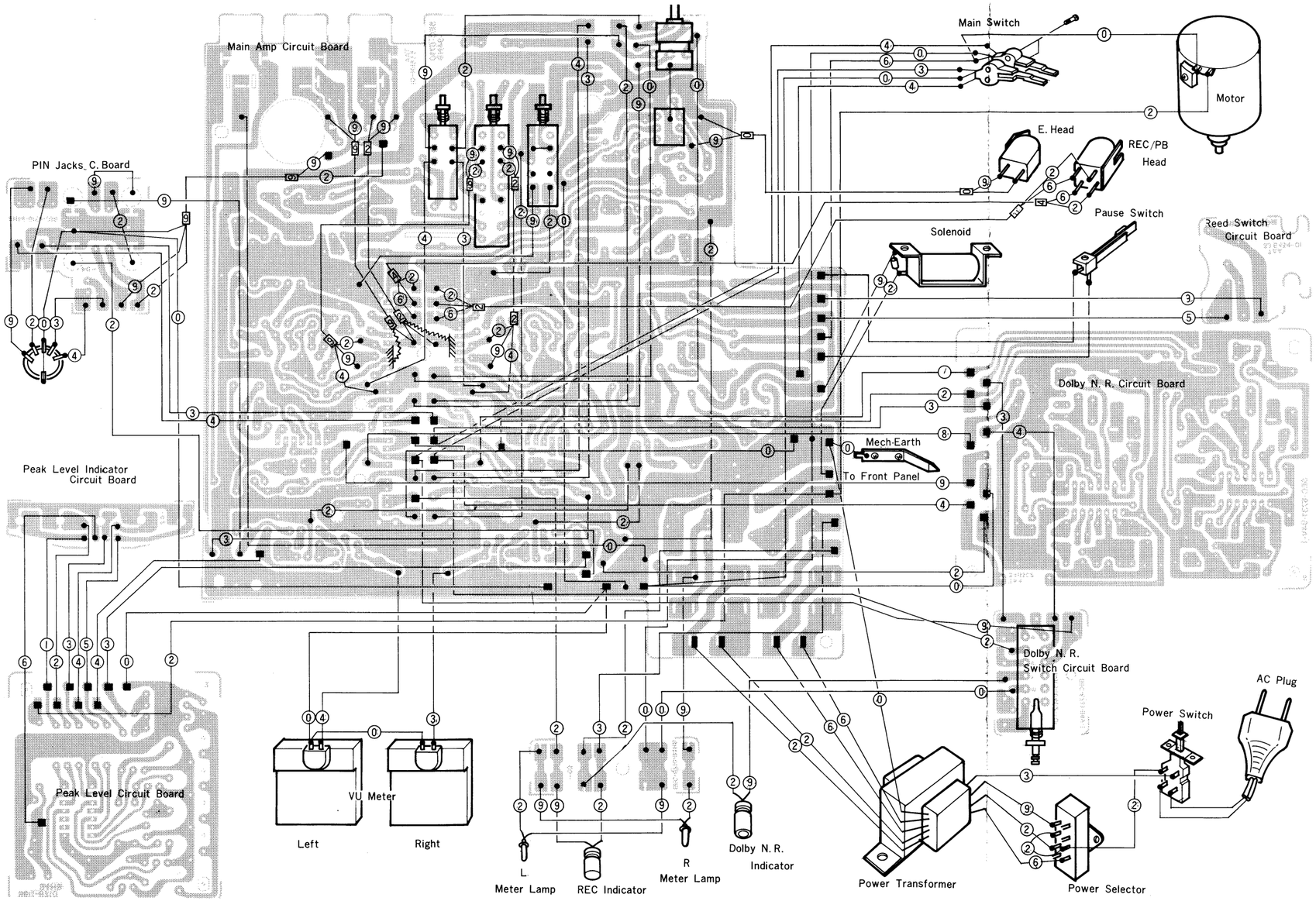
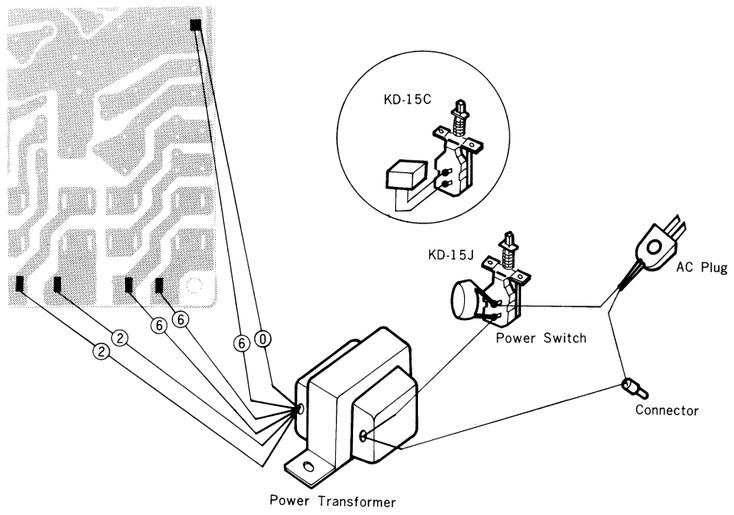
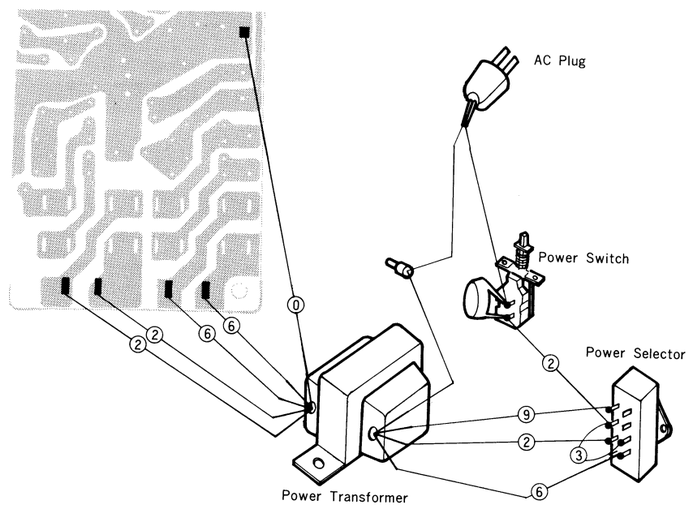


Fig. 16

KD-15C/J



KD-21U



Color code are shown below

1	.....	Brown	6	.....	Blue
2	.....	Red	7	.....	Violet
3	.....	Orange	8	.....	Grey
4	.....	Yellow	9	.....	White
.5	.....	Green	0	.....	Black

Circuit Board Parts List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
(Main Amp Circuit)	TAA338101-0B	Circuit Board (Main Amp Circuit Board, Indicator Circuit Board, Jack Circuit Board and Plug Circuit Board included)	Not supplied as parts Ass'y.	1
R143,243	QRD141K-104	C. Resistor	100kΩ ¼W	2
R102,202	" -332	"	3.3kΩ "	2
R103,203	" -392	"	3.9kΩ "	2
R104,204	" -563	"	56kΩ "	2
R105,205	" -221	"	220Ω "	2
R106,206	" -103	"	10kΩ "	2
R107,207	" -154	"	150kΩ "	2
R108,208	" -153	"	15kΩ "	2
R109,209	" -274	"	270kΩ "	2
R110,210	" -822	"	8.8kΩ "	2
R112,212	" -183	"	18kΩ "	2
R111,211	" -123	"	12kΩ "	2
R113,213	" -392	"	3.9kΩ "	2
R114,214	" -102	"	1kΩ "	2
R115,215	" -122	"	1.2kΩ "	2
R116,216	" -822	"	8.2kΩ "	2
R117,217,124,224, 135,235	" -101	"	100Ω "	6
R118,218	" -151	"	150Ω "	2
R119,219	" -331	"	330Ω "	2
R134,234	" -681	"	680Ω "	2
R121,221	" -104	"	100kΩ "	2
R123,223	" -560	"	56Ω "	2
R125,225	" -332	"	3.3kΩ "	2
R126,226	" -103	"	10kΩ "	2
R127,227	" -0R0	"	Jumper Wire	2
R128,228	" -822	"	8.2kΩ ¼W	2
R129,229	" -153	"	15kΩ "	2
R130,230	" -393	"	39kΩ "	2
R131,231	" -564	"	560kΩ "	2
R132,232	" -473	"	47kΩ "	2
R133,233	" -682	"	6.8kΩ "	2
R136,236	" -273	"	27kΩ "	2
R137,237	" -154	"	150kΩ "	2
R139,239	" -472	"	4.7kΩ "	2
R140,240	" -822	"	8.2kΩ "	2
R141,241	" -822	"	"	2
R142,242	" -683	"	68kΩ	2
R143,243	" -104	"	100kΩ	2
R15	" -563	"	56kΩ	1
R4	" -821	"	820Ω	1
R5	" -104	"	100kΩ	1
R6	" -472	"	4.7kΩ	1
R7,10	" -103	"	10kΩ	2
R9	" -563	"	56kΩ	1
R11	" -102	"	1kΩ	1
R12	" -101	"	100Ω	1
R13	" -392	"	3.9kΩ	1
VR103,203	QVP8A0B-023	Semifixed Resistor	2kΩ B Curve	2
VR101,201,104, 204	QVP8A0B-054	"	50kΩ B Curve	4
VR102,202	QVL6A3A-054	Variable Resistor	50kΩ	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	Q03091-141	Washer		1
L102,202	TAC000324-01	Inductor	18mH	2
L101,201	" -02	"	6.8mH	2
L103,203	" -06	"	680μH	2
L104,204	TAC000493-01	"		2
C101,201	QCS11HK-561	Ceramic Capacitor	560pH	2
C105,205	" -330	"	33pH	2
C106,206	" -101	"	100pH	2
C108,208	" -680	"	68pH	2
C114,214	" -221	"	220pH	2
C127,227	" -821	"	820pH	2
C128,228	" -151	"	150pH	2
C102,202	QFM41HK-272	Mylar Capacitor	0.0027μF	2
C107,207	" -123	"	0.012μF	2
C115,215	" -222	"	0.0022μF	2
C123,223	" -333	"	0.033μF	2
C124,224	" -153	"	0.015μF	2
C126,226	" -122	"	0.0012μF	2
R131,231	" -392	"	0.0039μF	2
C130,230	" -152	"	0.0015μF	2
C103,203	QEE41EM-475	E. Capacitor (Ta)	4.7μF 25V	2
C109,209	QEB41EM-336	" (Low Leak)	33μF "	2
C110,210,111,113, 213	" -475	" (")	4.7μF "	6
C104,204	QEW41AA-107		100μF 10V	2
C116,216	QEW41CA-106	"	10μF 16V	2
C117,217	" -107	"	100μF "	2
C112,212,118,218	QEW41EA-107	"	100μF 25V	4
C119,219	" -106	"	10μF "	2
C120,220,125,225, 129,229	" -475	"	4.7μF	6
C121,221	QEW41CA-336	"	33μF 16V	2
C122,222	QEW41AA-476	"	47μF 10V	2
C132,232	QEW41EA-335	"	3.3μF 25V	2
R122,222	QRD121K-391	C. Resistor	390Ω ½W	2
R138,238	QRD141K-183	"	18kΩ ¼W	2
R120,220	QRD146K-681	"	680Ω "	2
S101-1,101-9 S201-1,201-9	QSS9201-001	Slide Switch		2
S103-1,103-2 S203-1,203-2	QSP0219-005	Push Switch		1
S102-1,102,3 S202-1,202-3	" -006	"		1
S105-1,205-1	" -008	"		1
X101,102,102,202	2SC1327TU	Silicon Transistor		4
X104,204	2SC828R.S	"		2
X103,203	2SC1384R.S	"		2
D101,201,102,202	OA90	Ge Diode		4
IC101,201	TA7140PB	IC		2
	TAJ338305-0A	Jack Ass'y	Mike & Headphones	1
(OSC Circuit)				
L1	TAC294421-01	OSC Coil		1
X5	2SC828ARS	Silicon Transistor		1
R16	QRD146K-151	C. Resistor	150Ω ¼W	1
R17	" -100	"	10Ω "	1
C16,18	QFM41HK-103	Mylar Capacitor	0.01μF	2
C17	" -153	"	0.015μF	1
C20	QFS42BK-222	Polystyrol Capacitor	0.0022μF	1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
C21,22	QCS12HK-221	Celamic Capacitor	220pF	2
C19	QEW41EA-476	E. Capacitor	47μF 25V	1
VR106,206	QVP8A0B-054	Semifixed Resistor	50kΩ	2
VR1	QVZ3111-002	〃	1kΩ	1
	E40130-001	Tab		7
	E43727-002	〃		30
(Power Supply Circuit)				
Fuse 1,2	QMF51A2-R315	Fuse	315mA (for KD-15A/E KD-21A/E)	2
Fuse 3,4	-R20	〃	200mA	2
	TAZ000331-02	Fuse Holder	for KD-15A/E,KD-21A/E	8
Fuse 1,2	QMF51A2-R315LBS	Fuse	for KD-15B/KD-21B	2
Fuse 3,4	〃 -R20LBS	〃		2
	TAZ000331-02BS	Fuse Holder		8
C15	QFM41HK-103	Mylar Capacitor	0.03μF	1
R1	QRG016-681	Oxide Metal Filmed Resistor	680Ω	1
R3	QRW121K-R47	Wire Wound Resistor	0.47Ω ½W	1
C11	QEW40JA-227	E. Capacitor	220μF 6.3V	1
C12	QEW41CA-227	〃	220μF 16V	1
C9	〃 -108	〃	1000μF 〃	1
C13,14	〃 -476	〃	47μF 〃 〃	2
C8	QEW41EA-227	〃	220μF 25V	1
C10	〃 -337	〃	330μF 〃	1
C6,7	QEW41VA-477	〃	470μF 35V	2
C2,3,4,5	QCF12HP-103	Fixed Ceramic Capacitor	0.01μF	4
X3,4	2SC828RS	Silicon Transistor		2
X1,2	2SC1847QR	〃		2
D6	RD24E(1)	Zener Diode		1
D7,8,9,10	OA90	Ge Diode		4
	OA91			2
D1,2,3,4,12	T30155-001 or V06-B	Si Diode 〃		5
	TAR000488-01	Heat Sinking Plate	for sinking Heat of X1	1
D11	RD10E(1)	Zener Diode		1
	TAA338101-04	Circuit Board	for PIN type Jack	1
	TAA338434-01	〃	for Reed Switch	1
	TDS271409-01	Reed Switch		1
	TER271414-01	Spacer		1
	TEP338443-01	Tube		1
(Peak Level Circuit B.)				
	TAA338433-01	Circuit Board	for Peak Level	1
R502	QRD142K-394	C. Resistor	390kΩ ¼W	1
R503	〃 -474	〃	470kΩ 〃	1
R504	〃 -564	〃	560kΩ 〃	1
R505	〃 -684	〃	680kΩ 〃	1
R506	〃 -824	〃	820kΩ 〃	1
R507,511	〃 -331	〃	330Ω 〃	5
	〃 -0R0	〃	Jumper Wire	1
C501,502,504	QEW41EA-105	E. Capacitor	1μF 25V	3
C503	QEW41AA-477	〃	470μF 10V	1
VR501-505	QVP8A0B-055	Semi-fixed Resistor	500kΩ	5
R501	QRG016J-680	Oxide-Metal Film Resistor	68Ω 1W	1
D502,505	0A90	Ge Diode		4
X501,505	2SC828ST	Si Transistor		5
IC501	TD3404AP	IC		1
D501	IN4733T5	Zener Diode		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
	E43727-002	Tab		10
(Dolby N.R. C.Board)				
	TAA346302-01	Circuit Board		1
R301,401	QRD141K-153	C. Resistor	15kΩ	2
R303,403	" -102	"	1kΩ	2
R304,404	" -102	"	"	2
R305,405,306,406	" -472	"	4.7kΩ	4
R307,407	" -330	"	33Ω	2
R308,408	" -332	"	3.3kΩ	2
R309,409	" -473	"	47kΩ	2
R310,410	" -104	"	100kΩ	2
R311,411	" -121	"	120Ω	2
R312,412	" -154	"	150kΩ	2
R313,413	" -684	"	680kΩ	2
R314.414	" -274	"	270kΩ	2
R315,415,316,416	" -151	"	150Ω	4
R317,417	" -333	"	33kΩ	2
R302	QRG016J-151	Oxide-Metal-Film Resistor	150Ω	1
VR301,401	QVP8A0B-023	V. Resistor	2kΩ	2
F301,401	TAC346401-01	Low Pass Filter		2
C315,415	QCS11HK-221	F. C. Capacitor	220pF	2
C306,406	QFM41HJ-562	Mylar Capacitor	5600pF	2
C308,408	" -472	"	4700pF	2
C309,409	" -273	"	0.027μF	2
C311,411	" -473	"	0.047μF	2
C302,402	QEB41HM-334M	L.L.E. Capacitor	0.33μF/50V	2
C313,413	" -104M	"	0.1μF/50V	2
C314,414	" -334M	"	0.33μF/50V	2
C303,403	QEW41CA-227	E. Capacitor	220μF/16V	2
C304,404,305,405, 307,407,310,410, 312,412	" -106	"	10μF/16V	10
C301	QEW41EA-107		100μF/25V	1
	E43727-002	Tab		10
IC301	NE545B	IC		2
D301,401	0A91	Diode		2
	TAA346402-01	Circuit Board	for Dolby Switch	1
S104-1,104-2 S204-1,204-2	QSP0219-007	Push Switch		1
	SBSB3010V	Screw		1

Circuit Board Parts

Main Amp Circuit Board

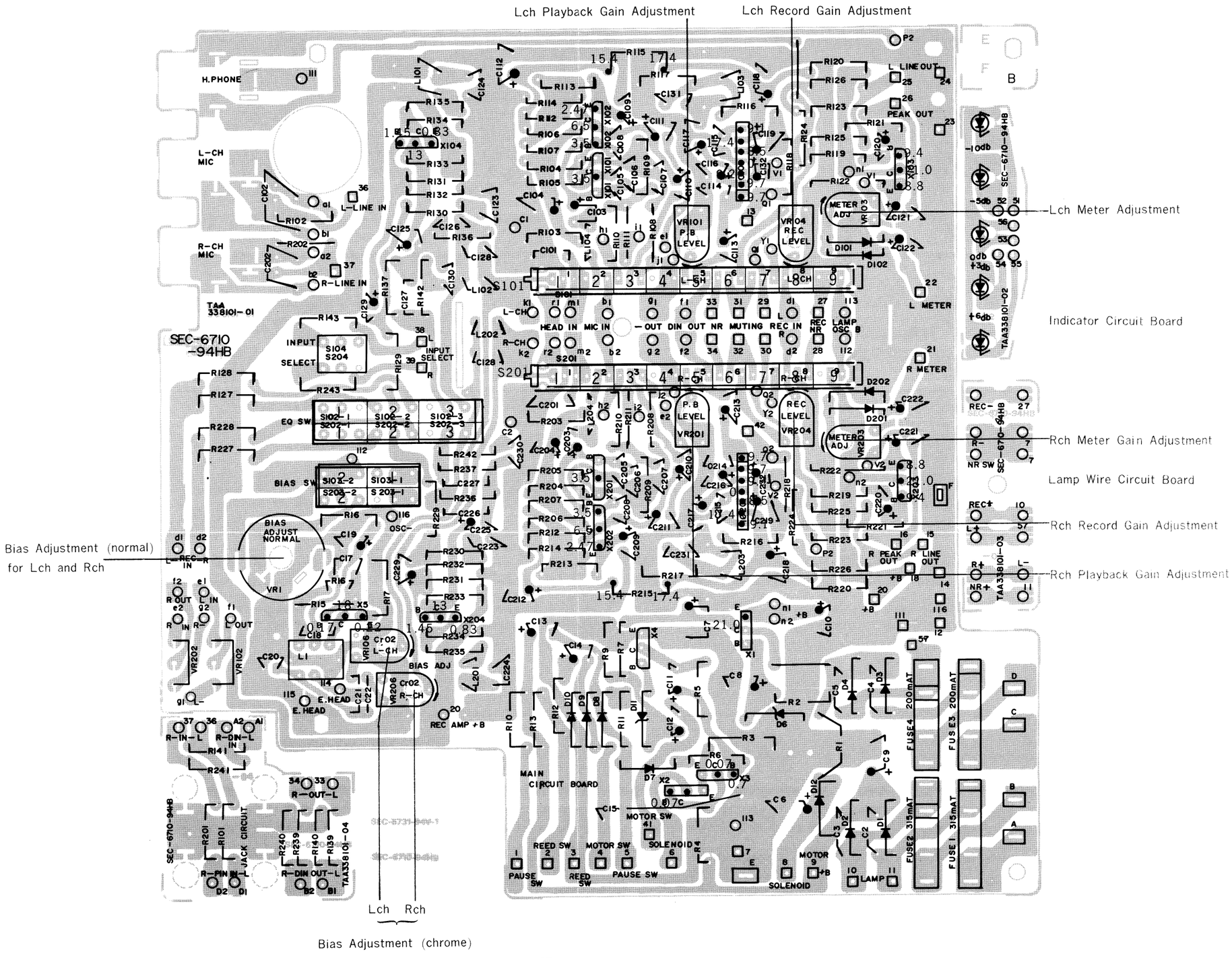
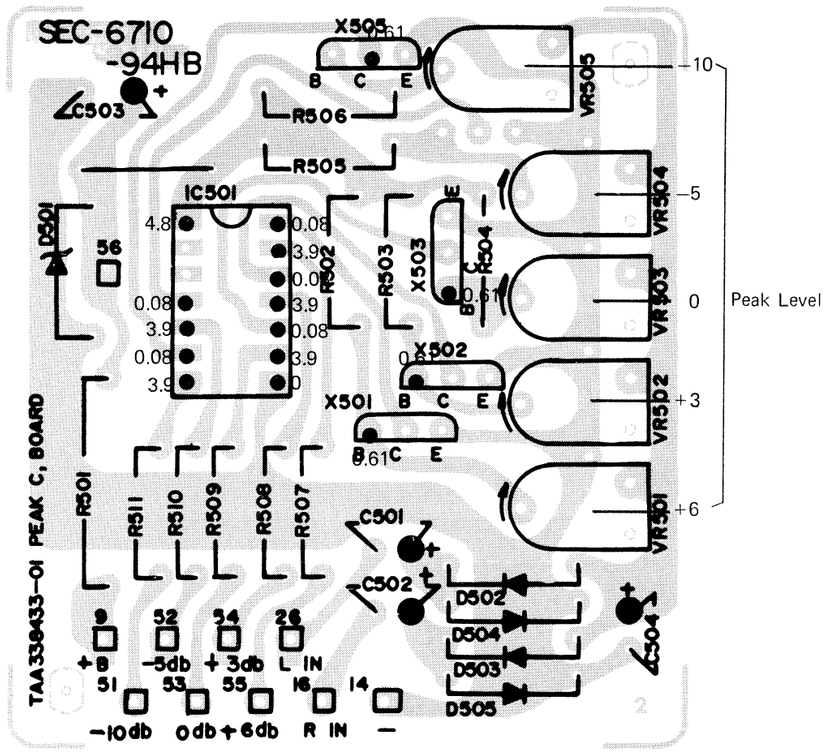


Fig. 17

Peak Level Circuit Board



Reed Switch Circuit Board

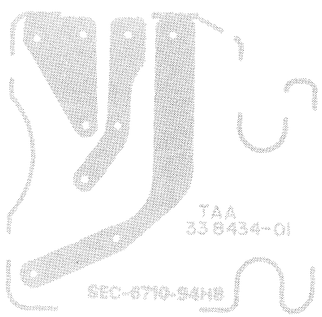
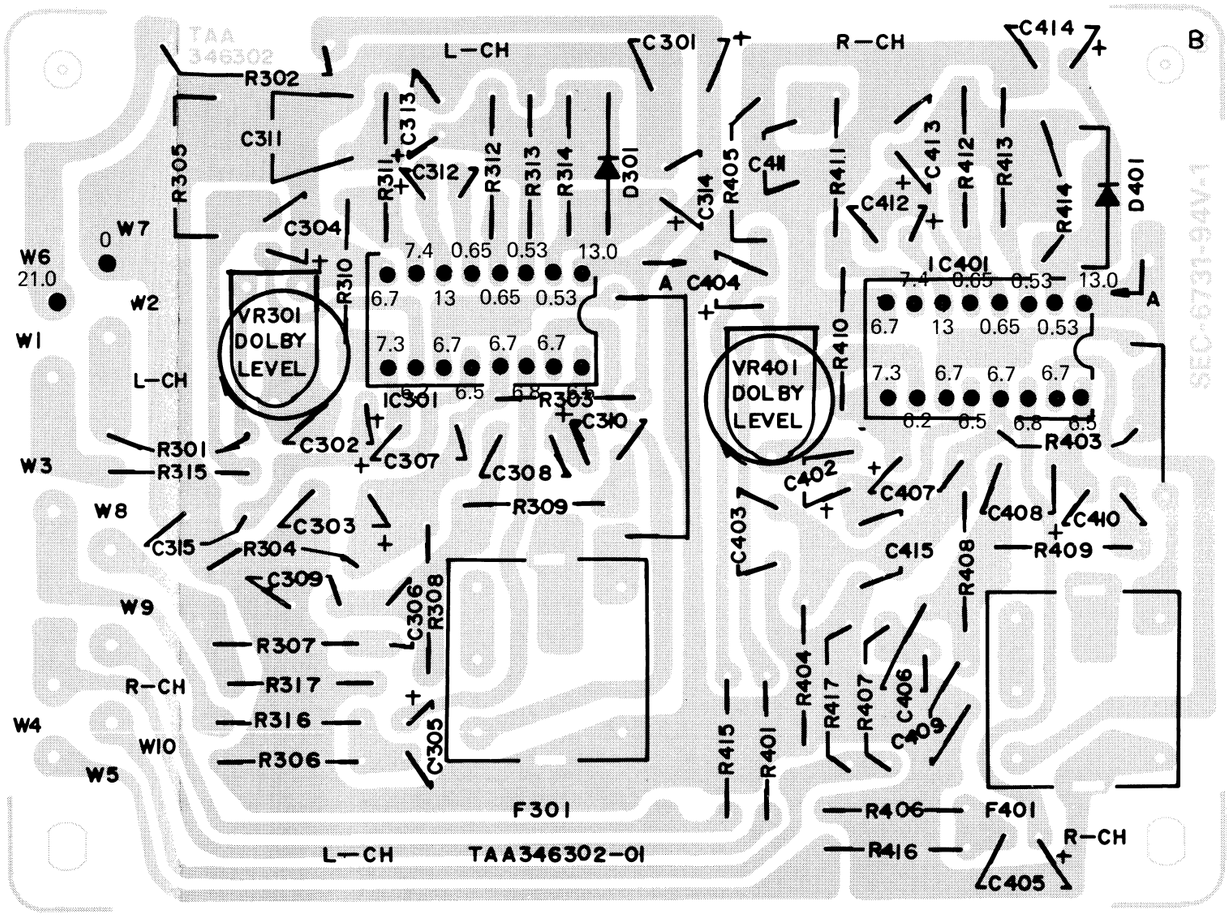


Fig. 18

Dolby N.R. Circuit Board



Dolby N.R. Switch Circuit Board

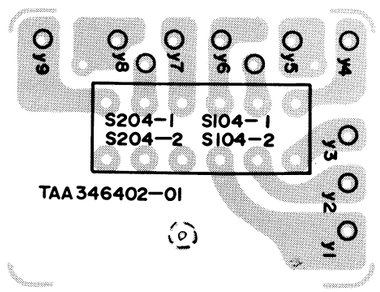


Fig. 19

Mechanical Component List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1	*8780181ZT	Chassis Base Ass'y		1
2	*8780104T	Pack Spring		1
3	*8780103T	Side Bracket		1
4	*8780291ZT	Push Switch Ass'y		1
5	*TJK338301-06	Push Button	for Rec	1
6	*TJK338301-07	"	for Stop	1
7	*TJK338301-05	"		4
8	5420301T	Rec Slide Lever		1
9	090302T	Collar		1
10	2680503T	Rec Safety Lever		1
11	1320303T	Spring		1
12	*8780301T	Rec Lever Bracket		1
13	7090481ZT	Head Panel Ass'y		1
14	480408T	Spring	for E. Head	1
15	4080411T	Collar	for Head Panel	1
16	4080413T	Spring	"	2
17	5420408T	Slide Lever		1
18	090302T	Collar		1
19	4080405T	RQ. Spring		1
20	*1310403T	Spring Plate	for R/P Head	1
21	*8780401T	Cassette Holder Stud		1
22	*8780403T	Collar	for R/P Head	1
23	8780402T	Head Stud	for E. Head	1
24	050403T	Collar	"	1
25	7150781ZT	Pinch Roller Ass'y		1
26	6680501T	Pinch Roller Spring		1
27	*THC000487-0A	R/P Head		1
28	THS265480-0A	Erase Head		1
29	*8781891ZT	Reel Disk Ass'y		2
30	040508T	Spring	for Backward Tension to Tape	1
31	*8780791ZT	Clutch Ass'y		1
32	2380406T	Spring		1
33	*8780891ZT	F.F. Idler		1
34	581316T	Spring	for F.F. Idler	1
35	4080804T	F.F. Function Plate		1
36	4080810T	Spring		1
37	*8780801	Rwd. Function Plate		1
38	4080810T	Spring		1
39	110505T	Special Washer		2
40	4080901T	Brake Arm		1
41	4080902T	Spring		1
42	4080903T	Brake Function Plate		1
43	*9701081ZT	Rwd. Idler Arm Ass'y		1
44	2110902T	Rwd. Idler		1
45	020905BT	Spring	(for Rwd. Arm)	1
46	580903ZT	Flywheel Ass'y		1
47	3690701T	FL Block		1
48	4460701T	Earth Plate		1
49	6300902T	Spacer		1
50	060405T	Spring		1
51	*8780901T	Flywheel Bracket		1
52	*8781001T	Motor Bracket		1
53	*4081211T	Motor Collar		3
54	*T45687-001	Motor Cushion		3
55	*M1607-0A	Motor Ass'y		1
56	7630601T	Main Belt		1
57	3130702T	Mat		1
58	8001292ZT	Pulley Ass'y		1
59	4081405T	Auto Stop Lever		1
60	4081407T	Spring		1
61	408140ZT	Collar		1
62	409158T	Slide Lever Ass'y		1
63	4081510T	Spring		1
64	4081503T	Pinch Roller Arm Lever		1
65	2381304T	Collar		1

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
66	*TGN294317-0B	Counter Ass'y		1
67	*8781301T	Counter Bracket		1
68	*2441102T	Counter Belt		1
69	*8781401T	Pause Lever		1
70	5421803T	Pause Lever Spring		1
71	5421881Z	Pause Slide Lever Ass'y		1
72	*8781501T	Pause Switch Bracket		1
73	*8781502T	Pause Switch Plate		1
74	6681415T	Pause Switch		1
75	*8781691ZT	Solenoid Ass'y		1
76	580301T	Spring		1
77	4081407T	Spring		1
78	*8781791ZT	Pause Plate Ass'y		1
79	TJL000430-01	Head Plate		1
80		Tube	ϕ3x22D, for Rwd. Spring	1
81	T30155-001 or V06-B	Silicon Diode	for Solenoid	1
90	LPSP2004Z	Screw	Pause Lever, Bracket	2
91	LPSP2005Z	"		8
92	SDSP2005Z	"	Pause Switch	1
93	SPSX2006Z	"	R/P Head	1
94	SPSP2010Z	"	"	1
95	LPSP2604Z	"	Motor Bracket	3
96	SDSP2604Z	"	Head Panel	1
97	SPST2604Z	Tapping Screw	Cassette Holder Springx1, Side Bracketx2 Pause Switch Bracketx2	5
98	LPSP2605Z	Screw		7
99	SDSP2606Z	"	Solenoid Bracket	1
100	SPSP2607Z	"	Motor Collar	3
101	LPSP2608Z	"	Auto Stop Lever, Play Slide Lever	2
102	SPSP2610Z	"	Flywheel Holder	1
103	SPSP2012Z	"	Erase Head	2
104	SSSP3005ZS	"	Counter	2
105	WSB2000N	Washer	R/P Head	1
106	WNS2000Z	"	Pause Lever	1
107	WNS2600Z	"	Auto Lever	1
108	REE1200	E Ring	Reel Disk	2
109	REE1500	"		5
110	REE1900	"	Pinch Roller	1
111	REE2000	"	Clutch Arm x 1 Slide Lever Stud x 2	2
112	REE2500	"		4
113	REE3200	"	Button Lever x 1 F.F. & Rwd. Lever x 1	2
114	REE4000	"	F.F. Arm Main Boss	2
115	2680515T	Stopper	for Rec. Lever	1
116	031503T	Special Lever	for Capstan Thrust	1
117	031504T	"	Capstan	2
118	031307T	Wire Holder	Erase Head	1
119	031501T	Washer	for Motor	3

Mechanical Component

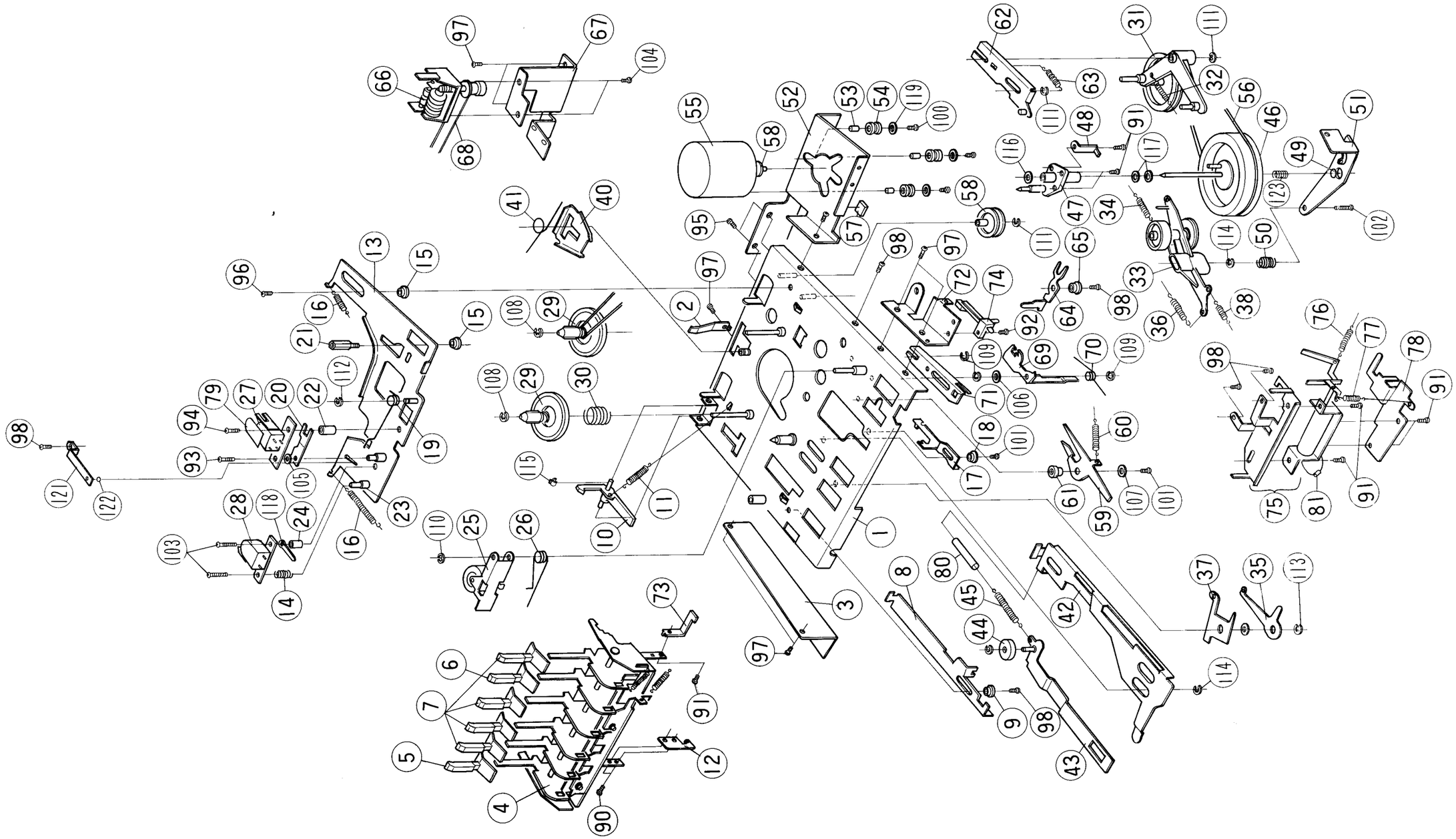


Fig. 20

Enclosure Assembly and Electrical Parts Except Circuit Board Parts

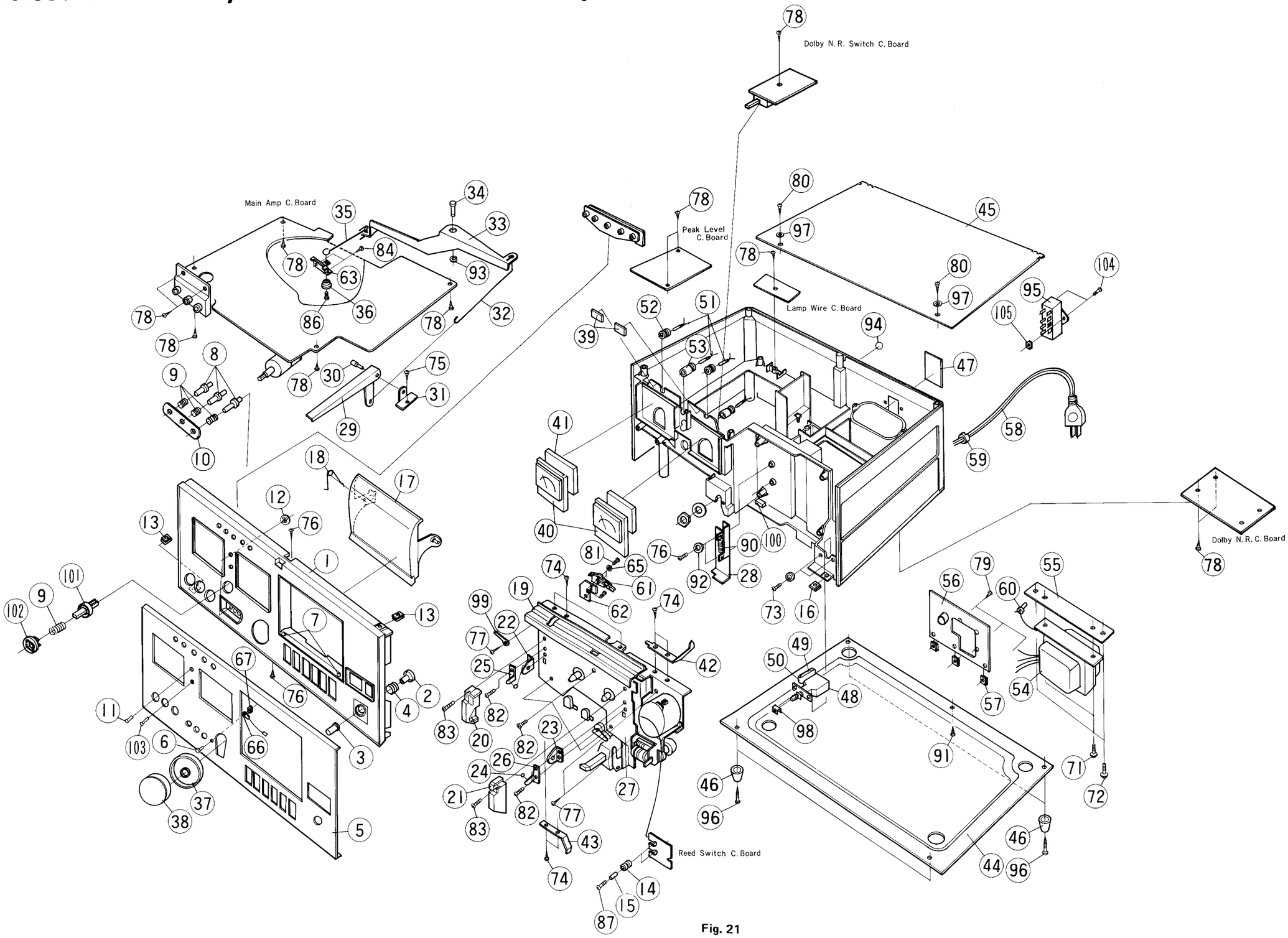


Fig. 21

Enclosure Ass'y and Electrical Parts List except Circuit Board Parts

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1 - 12	ZCKD21Y-CBF	Front Panel Ass'y		1 set
1	*TJM338104-03	Front Panel		1
2	*TJK338402-01	Power Knob		1
3	*TJK338401-02	Cap		1
4	T30301-125	Spring	for Power Knob	1
5	*TJP338204-04	Front Plate		1
6		Eyelet		1
7	V4439-4-01	Stopper Cushion	for Lid	2
8	TJK338403-0B	Knob Ass'y (1)	for Tape Select.	3
9	T30301-126	Spring	for Tape Sel. Knob	4
10	*TJS338404-01	Knob Holder (1)		1
11	E46673-003	Rabbit Eye	Rec Indicator (Red)	1
12	RDS3000Z	CS Ring		1
13	TFB313563-02	Plate Nut	for Front Panel	2
14	53492-002	Bushing		2
15	T30302-063	Color		2
16	TFB313563-02	Plate Nut		1
17	*TJM338201-01	Cassette Lid		1
18	*TFW338430-03	Tosion Spring		1
19	*TEP338303-01	Rear Holder		1
20	TEP336303-01	Cover		1
21	" -02	"		1
22	TEP336439-01	Holder		1
23	" -02	"		1
24	T41615-007	Steel Ball		2
25	TFP336440-01	Spring Plate		1
26	" -02	"		1
27	TFB338304-01	Holder Plate		1
28	*TGB338417-0A	Slide Lever Ass'y		2
29	*TFB338421-01	Lever		1
30	*TFH338422-01	Shaft		1
31	*TFB338423-01	Bracket		1
32	*TFW338424-01	Connecting Lod (1)		1
33	*TFB338425-01	Record Lever		1
34	*TFH338426-01	Shaft		1
35	*TFW338427-01	Connecting Lod (2)		1
36	T43909-002	Metal		1
37	*TJK338406-0A	Volume Knob	Left	1
38	*TJK338407-03	"	Right	1
39	TJN000354-01	Cushion		2
	TJN000354-03	"		1
40	*T31058-004	Lever Meter		2
41	TJN000354-02	Cushion		2
42	*TFP338410-01	Earth Lug		2
44	*TFB338203-01	Bottom Plate		1
45	*TJP338202-03	Top Plate		1
46	*TJF338444-0A	Foot		4
47	TJL000342-18	Name Plate	KD-21A	1
	TJL000342-19	"	KD-21B	1
	TJL000342-16	"	KD-15C	1
	TJL000352-01	"	KD-21E	1
	TJL000342-15	"	KD-15J	1
	TJL000342-17	"	KD-21U	1
48		Push SW.	for Power	1
	QSP1110-222	"	KD-15J/C	
	QSP2111-011	"	KD-15A/E, KD-21A/E	
	QSP2111-011BS	"	KD-15B, KD-21B	
	QSP1110-221	"	KD-15U, KD-21U	
49	QFH43AM-223	M.M. Capacitor	for KD-15U, KD-21U	1
	QFH72BM-223	"	for KD-21J/C	1
50	T47047-001	Conednser Cap		1
51	T48188-002	Pilot Lamp		2
	T46821-004	"		2
52	*TJZ338414-02	Lamp Holder		2

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
53	*TJZ338405-01	Lamp Holder		1
54	TAP346301-01	Power Transformer	for KD-21A/B/E, KD-15A/B/E	1
	TAP347301-01	"	for KD15J/C	1
	TAP348301-01	"	for KD-15U, KD-21U	1
55	*THB338429-01	Trans Bracket		1
56	*TAJ271307-03	Jack Ass'y	PIN & DIN	1
57	TFB313563-01	Plate Nut		3
58	QMP3900-244	Power Cord With Plug	for KD-21E	1
	QMP1200-244	"	for KD-15J/C	1
	QMP2500-200	"	for KD-15A, KD-21A	1
	QMP9017-007BS	"	for KD-15B, KD-21B	1
59	QHS3876-252	Strain Relief	for Power Cord	1
60	FG9060-001	Connector		1
61	651804T	Main SW		2
62	8781201T	Switch Bracket		2
63	TFB338428-01	Connecting Bracket		1
64	*TJM338102-01	Cabinet		1
65	WSB2000N	Washer	for Main SW.	2
66	50242-5	Lug		1
67	NTB2000	Nut		1
68	SPSP2004Z	Screw		2
71	DPSP3006Z	"	for Power Trans.	2
72	DPSP3020ZS	"	for P.T. Bracket	2
73	DPSP3008ZS	"	for Power SW	2
74	SBSB2606Z	Tapping Screw	for Rear Holder Earth Lug	7
75	SBSB3008Z	"	for Bracket	1
76	SBSB3010Z	"	for Slide Lever	4
77	SBSB3010C	"	for Mechanism	4
78	SBSB3010V	"	for P.C.B.	7
79	SDSA3010B	"	for Jack Plate	3
80	SDSA3012B	"	for Top Plate	2
81	SPSP2014Z	Screw	Main SW	2
82	SSSP2605R	"	Holder	4
83	SPSP2614Z	"	Cover	2
84	LPSP2006Z	"	Connecting Bracket	1
85	LPSP2605Z	"	Main SW	1
86	LPSP2606Z	"	Metal	1
87	DPSP2608Z	"	Bushing	2
88	SSSP2004N	"	Holder Plate	3
90	T30300	Spring	Slide Lever	1
91	SBSB3012Z	Tapping Screw	Bottom Plate	1
92	Q03091-105	Washer	Slide Lever	2
93	REE3000	E Ring	Record Lever	2
94	QZL1001-001	UL Label	for KD-15J	1
95	QSS2325-006	Selector Switch	for KD-15A/E, KD-21A/E	1
	QSS2325-006BS		for KD-15B, KD-21B	1
96	SBSB3016Z	Tapping Screw	Bottom Plate	2
97	Q03093-814	Washer	Top Plate	2
98	TJS338407-3	Switch Holder	for Power Switch	1
99	S4709-002	Wire Clamp		1
100	TER338437-01	Cushion		1
101	TJK343402-02	Knob	Dolby	1
102	TJS343403-01	Holder	"	1
103	E46673-002	Rabbit Eye	" (Green)	1
104	SDSP3008RS	Screw	Selector Switch	1
105	NTB3000	Nut	"	1

Packing

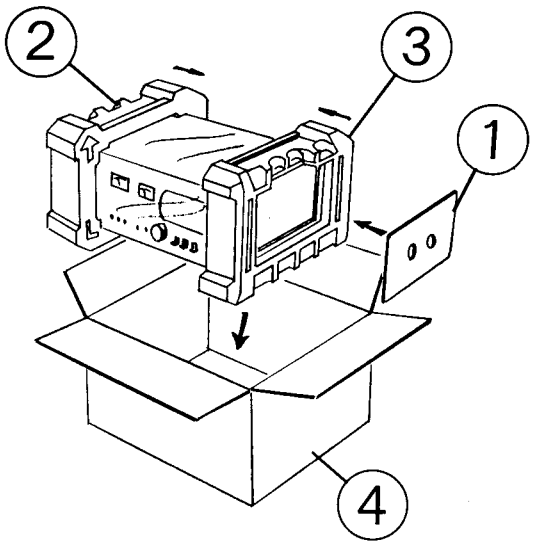


Fig. 22

Packing Material List

Ref. No.	Parts No.	Parts Name	Remarks	Q'ty
1-4	*TKB338306-0A	Packing Ass'y		1 set
	" -0C	"	for E,B,U	1
	" -0E	"	for A	1
	" -0F	"	for J	1
	" -0G	"	for C	1
1	*TKB338306-02	Plate		1
2	*TKC338105-01	Cushion	Left	1
3	*TKC338106-01	"	Right	1
4	*TKB338306-06	Case	for E,B,U	1
	" -08	"	for A	1
	" -10	"	for J	1
	" -11	"	for C	1
	T6800-00M	Envelope	for Cassette Deck	1
	AP4056A-036	"	for Power Cord,PIN Cord or DIN Cord	2
	" -077	"	for Instruction Manual	1

Accessories

Parts No.	Parts Name	Remarks	Q'ty
T30046-00B	PIN Cord	KD-15A/C/J/U, KD-21A/U	2
CN-201	DIN Cord	for KD-15B/E, KD-21B/E	1
T47796-00B	Head Cleaning Stick		2
AP4056A-024	Envelove	for Head Cleaning Stick	1
TLT000429-01	Caution Card		1
T7626EGF	Instruction Book		1
T47099-001	Warning Card	for KD-15C/J	1
TLT000448-01	NO User Service Caution	for KD-15C/J	1
BT20022B	Warranty Card	for KD-15C/J	1
BT20023	Service Procedure	for KD-15C/J	1
BT20024	Special Reply Card	for KD-15C/J	1